Appl. No. 10/679,771
Response dated: February 27, 2006
Reply to Office action of November 1, 2005 and
Non-Compliant Amendment of February 10, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of Claims:

1. (Currently amended) A prism sheet for adjusting paths of light externally provided, comprising:

a light incident surface for receiving the light; and

a light emission surface for emitting the light incident on the light incident surface, wherein the light emission surface includes at least one light concentrate unit which has at least two inclined surfaces on which the light is incident and refracted,

wherein and a peak angle between the two inclined surfaces is in a range from about 90° to about 140° obtuse and determined in association with a refraction index of the prism sheet is in a range from about 1.4 to about 1.7.

2. (Original) The prism sheet of claim 1, wherein the light emission surface includes a plurality of the light concentrate units each having the at least two inclined surfaces and the peak angle.

3. (Original) The prism sheet of claim 2, wherein the light concentrate units each have a shape of a prism column and are arranged parallel with each other in a longitudinal direction of the light concentrate units.

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4. (Original) The prism sheet of claim 1, wherein one of the two inclined surfaces forms a first angle with respect to the light incident surface and the other of the two inclined surfaces forms a second angle with respect to the light incident surface, the first and second angles are equal to each other.

5. (Canceled)

6. (Canceled)

7. (Currently amended) The prism sheet of claim 6~~1~~, wherein the peak angle is in a range from about 90° to about 120°, and the refraction index of the prism sheet is in a range from about 1.41 to about 1.49.

8. (Withdrawn) The prism sheet of claim 6, wherein the peak angle is in a range from about 90° to about 120°, and the refraction index of the prism sheet is in a range from about 1.51 to about 1.59.

9. (Withdrawn) The prism sheet of claim 6, wherein the peak angle is in a range from about 90° to about 120°, and the refraction index of the prism sheet is in a range from about 1.61 to about 1.69.

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10. (Currently amended) The prism sheet of claim 6̶1̶, wherein the light exits the inclined

surfaces at a light emission angle with respect to an imaginary line perpendicular to the light

incident surface, and the inclined surfaces are configured such that the light emission angle is in

a range from about 5.86° to about 26.23°.

11. (Original) The prism sheet of claim 10, wherein the inclined surfaces are configured

such that light incident on one of the inclined surfaces travels in accordance with the following

conditions of Equations 1 to 3:

$$\beta = 90° - \frac{\alpha°}{2}$$ --- Equation 1

$$\gamma = \arcsin(\frac{1}{n_p} \times \sin\beta°)$$ ----------------------------- Equation 2

$$\theta_{out} = 90° - \frac{\alpha°}{2} - \gamma°$$ ------------------------------- Equation 3

where, "α" represents the peak angle, "β" represents an incidence angle between a light incident

direction and a normal of the one of the inclined surfaces, "γ" represents the refraction angle,

"θ_{out}" represents the emission angle, and "n_p" represents the refraction index.

12. (Withdrawn) The prism sheet of claim 6, further including a curved surface formed

between the at least two inclined surfaces of each of the light concentrate units.

13. (Withdrawn) The prism sheet of claim 12, wherein the light concentrate units each

have a first width and the curved surface has a second width, a ratio of the second width to the

first width is in a range from about 5% to about 20%.

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14. (Currently amended) The prism sheet of claim 6̶1, further including a body in which the light incident on the light incident surface travels toward the light emission surface, wherein the body integrally formed with the light incident surface and the light emission surface.

15. (Withdrawn) The prism sheet of claim 6, further including a base layer in which the light incident on the light incident surface travels toward the light emission surface, wherein the base layer is separately formed and attached onto the light emission surface such that the at least one light concentrate unit is disposed on the base layer.

16. (Currently amended) The prism sheet of claim 6̶1, wherein the light concentrate units are made of material including polycarbonate, polyester, polyethyleneterphthalate, or a combination thereof.

17. (Currently amended) The prism sheet of claim 6̶1, wherein the peak angle is in a range from about 110° to about 140°, and the refraction index varies in proportional to a value of the peak angle.

18. (Currently amended) A liquid crystal display device comprising:

a lamp assembly for generating light;

a diffusion plate for diffusing the light;

a prism sheet for adjusting paths of the light, the prism sheet including:

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a light incident surface for receiving the light; and

a light emission surface for emitting the light incident on the light incident surface,

wherein the light emission surface includes at least one light concentrate unit which has at least

two inclined surfaces on which the light is incident and refracted, wherein and a peak angle

between the two inclined surfaces is in a range from about 90° to about 140° obtuse and

determined in association with a refraction index of the prism sheet is in a range from about 1.4

to about 1.7; and

a LCD panel assembly for displaying images using the light from the prism sheet and

image data externally provided.

19. (Original) The liquid crystal display device of claim 18, wherein the light emission

surface includes a plurality of the light concentrate units each having the at least two inclined

surfaces and the peak angle, and the light concentrate units each have a shape of prism column

and are arranged parallel with each other in a longitudinal direction of the light concentrate units.

20. (Canceled)

21. (Currently amended) The liquid crystal display device of claim 20 18, wherein the

lamp assembly has a plurality of lamps arranged parallel with each other in a selected direction,

the lamps being disposed at a side of the diffusion plate opposite to a side at which the prism

sheet is disposed.

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22. (Withdrawn) A method of fabricating a prism sheet for adjusting a light path, comprising:

providing a base layer having a flat surface;

disposing light refracting material on the flat surface of the base layer, the light refracting material having fluidity properties;

leveling the light refracting material so that a layer of the light refracting material is formed on the flat surface of the base layer;

transforming the layer of the light refracting material into a plurality of prism columns arranged parallel with each other on the base layer; and

curing the plurality of prism columns to have solidity properties.

23. (Withdrawn) The method of claim 22, wherein the transforming includes pressing the layer of the light refracting material with a pattern having the same shape as the prism columns, wherein the prism columns are formed to have a peak angle at a peak edge of the respective prism columns and the peak angle is in a range from about 90° to about 140°.

24. (Withdrawn) The method of claim 23, wherein the prism columns with solid properties have a refraction index in a range from about 1.4 to about 1.7.

25. (Withdrawn) The method of claim 24, wherein the peak angle varies in proportional to a refraction index of the light refracting material.

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26. (New) The prism sheet of claim 1, wherein the peak angle is in a range from about

100° to about 125°, and the refraction index of the prism sheet is in a range from about 1.51 to

about 1.59.

27. (New) The prism sheet of claim 1, wherein the peak angle is in a range from about

130° to about 140°, and the refraction index of the prism sheet is in a range from about 1.61 to

about 1.69.

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